Use of the Rorschach as a Measure of Creativity in Children

A Thesis

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AN ABSTRACT OF THE THESIS OF

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This study sought to establish a positive correlation between the Rorschach and the Torrance Tests of Creative thinking when the Rorschach is used as a measure of creativity. It was composed of 30 subjects (15 male and 15 female) between the ages of 6 and 12 years of age. Overall mean age was 10.4 years. Mean age for males was 10.1 and for females 10.3.

Both the Rorschach and the Torrance were administered individually to each of the 30 subjects. The Rorschach was scored for creativity using Holt's method for scoring for primary process manifestations. The Torrance was scored for fluency, flexibility and originality.

The scores from these two instruments were compared employing a Pearson Product-moment correlation. The Rorschach was found to correlate positively with the Torrance for fluency at .925; flexibility, .875; and originality, .920. Scores for males and females were not found to differ significantly. All values were found to be statistically significant at the greater than $\underline{p} < .01$ level.

It was concluded that the Rorschach presents itself as a valid measure of creativity for children when Holt's scoring method is used. Clinically this could prove to be of value when determining available resources of children in the therapy setting. It could also prove of value in studying creativity in children for purposes of educational research and prove conducive to a broadened understanding of creativity.

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CHAPTER 1

Psychoanalytic theory is also a theory of cognition which posits primary and secondary process as two of its most basic principles. Freud originally distinguished between these two mental activities (1900/1933, 1895/1958, 1911/1958) and later they were clarified and developed by Rapaport (1950). Primary process thinking, which is generally considered to be more primitive than secondary process thinking, is unconscious and operates according to the pleasure principle. Thus it effects an immediate discharge of drive-laden tension through the management of large quantities of psychic energy. Freud conceptualized this as a subliminal process which allowed for the discharge of repressed affect resulting from intrapsychic conflict. Kris (1952) later expanded Freud's ideas of creativity in his own theory of regression in the service of the ego in which emphasis was shifted from intrapsychic conflict to the concept of autonomous and conflict-free ego functioning. For Kris this represented the ego's ability to regress to unconscious thought processes for the specific purpose of producing creative work through the use of unconscious affect and fantasy.

Various aspects of creativity and its relationship to other factors of human thinking have been investigated since publication and inception of the Rorschach Technique by Herman Rorschach in 1942. Rorschach proposed that his test could be used to differentiate

between creative and non-creative individuals. Klopfer, Ainsworth, Klopfer, and Holt define this creativity as, "a capacity to integrate archaic impulses or drives within the organization of self and conscious values, and to integrate inner experience with external reality and its demands." According to Rorschach's theory, a creative person would exhibit four traits when tested which included (1) a maximum number of good form responses (productivity), (2) a maximum number of original responses, (3) a maximum number of organized whole responses, and (4) a maximum number of human movement responses. As he offered no statistical data in support of these hypotheses, subsequent research has endeavored to establish support for his theories.

There seems to have developed a mentality that creativity could only be validly investigated with separation from other techniques; therefore, little research has been conducted integrating creativity factors with Rorschach responses since the development of Holt's Manual for the Scoring of Primary Process Manifestations in Porschach Responses in 1969. When Holt developed his scoring manual for analyzing primary process manifestations on the Rorschach, his intent was to demonstrate that separate instruments for determining creativity were redundant and that creativity could be validly judged from a projective-type instrument such as the Rorschach. Suler (1980) declared, "Holt's system for scoring primary process manifestations on the Rorschach will probably be the most powerful tool in such [i.e.,

creativity] studies."

A large number of research projects have investigated creativity / in children utilizing various methods for identifying creativity such as Wallach-Kogan, Torrance Tests of Creative Thinking, and other instruments designed specifically for measuring creativity. Studies on creativity as related to the Rorschach have focused mainly on adults and very little work has actually been done with children. Suler and others have also recognized a divergence in the definition of creativity as it relates to children and as it relates to adults. According to Dudek (1974), creativity is defined either as a personality trait (as it relates to children) or as a product (as it relates to adults). This is interpreted as a difference in creative styles by Suler who states that:

These creative styles, as evident in problem solving and perhaps in certain fields of science, may not demand a direct access to primary process but may instead involve the use of cognitive operations derived from the developmental integration of primary process styles into stable secondary process functions.

This is Suler's definition of nonregressive, (i.e. adult, creativity.

Russ (1982) avers that, "Psychodynamic theory predicts that (children who can permit drive-laden material to surface in fantasy and play, and who can cognitively integrate and master that material should be open to ideas and flexible in their problem-solving approach."

Operationally, Ungersma (1976) defines creativity as, "the original act of certain persons who are sensitive to their environment and responsive to their capacity for fantasy and the daydream."

It is the contention of Shapiro (1975) that a developmental definition or perspective of creativity would lead to clarification of the trait that is being measured. She states that, "Most psychological studies define and attempt to measure creativity in terms of associative fluency or uniqueness of response . . . " and that, "When we judge children's creative work in this way, we are guilty of adultmorphism." She then proceeds to delineate the developmental stages as they apply in the process of creativity in children.

Torrance utilizes the concept of creative strength in determining the degree of creativity in the Torrance Tests of Creative Thinking. In the scoring manual he states:

It may also be helpful to think of responses showing no creative strength as being characterized by requiring little intellectual energy; that is, little intellectual energy is necessary to give obvious, common, and learned responses. In contrast, more intellectual energy is required to give responses characterized as being beyond what is learned, practiced, habitual, and away from the obvious and commonplace. Hence, these latter kinds of responses are thought of as "showing creative strength."

Most of the responses not listed in the manual are of this type and earn two points each (Torrance, 1974).

Thus, Torrance's concept of creativity appears to relate more to uniqueness of response and an ability to develop rare responses or solutions. Rarity of response (originality) is also one of the scoring criteria used in the Rorschach. Thus, the relationship inferred by Holt between what is being measured by both instruments should be palpable.

Review of the Literature

Although it has always been assumed that there is a positive relationship between primary process integration and age, Georgopoulo (1968) found a negative relationship between tolerance for unrealistic experience and age which she interpreted as a progressive decrease in cognitive control with increasing age when she studied 60 children with average ages of 8.3, 11.5 and 14.10. Testing instruments were the Rorschach, Schroeder staircase and Necker cubes. From this study she hypothesized that tolerance for unrealistic experiences may be related to the acceptance of certain primary process aspects of the personality such as fantasy expression.

Rogolsky (1967) also found that the role of primary process as the main source of creativity was not supported when she utilized drawings from 228 third-grade children. Three drawings were collected from each child and two were rated using the Persuasability Booklet by Abelson and Lesser, the Rorschach, Holt's measures for scoring for

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primary process and I. Cohen's "Form Level of Responses with Primary Process" measure.

Investigating the effects of sex differences on primary process thinking and flexibility in children, Russ (1982) tested 47 third-grade children, 8 and 9 years of age. For males it was found that the capacity to access and integrate primary process material was significantly related to the capacity to shift problem-solving strategies on the water-jar test; however, results were negative for females. Results of the study suggested that for females, the percent of primary process material may be a predictor of cognitive flexibility rather than an ability to integrate primary process material for use in problem-solving strategies.

Primary process was found to be significantly related to verbal productivity in subjects from Kindergarten through Grade 4 when 80 children Kindergarten through Grade 6 were tested by Goodman in 1965. The same study also determined that a greater number of human than animal responses would be given on the Rorschach by the same subjects. Use of the third person was found to relax the ego control of subjects and thus elicited a greater amount of primary process intrusion.

The development of primary process usage in children's Rorschachs was investigated by Caprara (1986) including 102 children ages 6-8, 9-11, and 12 and 13. Children were tested three or two times according to age cohort within six months following their birthday utilizing Klopfer technique with the exception of testing the limits. An affect

inquiry was included as well as administrative modifications suggested in Holt's primary process manual (1969) with protocols being tape recorded. It was concluded that regardless of sex or score, primary process tended to diminish with age which was homologous with an increase in cognitive control with increasing age.

Results of a study conducted by Russ (1980) support the major hypothesis that primary process integration is positively related to achievement in children independent of IQ. Fifty-one 7-8-year-olds were administered the Rorschach and it was scored according to Holt's Primary Process Scoring System. Grade point average and Primary Reading Profile Test scores were criteria of achievement.

It was found that differences in assessment context did not significantly affect creativity-assessment correlations when Sherwood (1969) studied 40 sixth grade males using five Torrance and three Wallach-Kogan measures and then compared them with 40 control subjects. Tests were scored for originality, fluency and flexibility. It was determined that flexibility did not relate to IQ more than either fluency or originality.

When Kershner and Ledger (1983) compared 30 gifted children with 30 average children aged 9 through 11 on Torrance Tests of Creative Thinking and thinking style, i.e. integrated and left-right hemisphere, the results supported the relative independence of select facets of creativity from general intellectual factors, but suggest

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influential relationship by psychological, intellectual and social factors. The data did not support the theoretical position that IQ is the primary predisposing factor in the potential for creative behavior of children. The results demonstrated that among the current sample of preadolescents, intellectually gifted females with integrated hemispheric thinking style were advantaged in verbal and figural creativity measures. Children with average IQ's were found to have a high potential for certain areas of creative performance and to show a preference for left-hemispheric thinking in comparison to gifted children. An integrated thinking style was clearly related to creativity.

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When 39 fifth-grade children were given the Torrance Tests of Creative Thinking: Verbal Form A, Hocevar (1979) determined that flexibility and originality were functions of fluency rather than distinct dimensions. This was interpreted to mean that the Torrance is only a reliable measure of fluency.

In 1986, Runco studied 150 children grades 5 through 8 utilizing the WISC-R and a self-developed measure of creativity. Findings suggested that the quality of creative performance is not related to fluency or IQ. Results did indicate that certain areas of extracurricular creative performance, i.e. music, writing, etc., were predictable from fluency.

The spontaneous development of creative thinking in 141 11-14year-olds was studied and no significant differences were found

between the performance of older and younger Ss using the Torrance Tests of Creative Thinking (Mihalevici, 1977). It was concluded that information increase, intellectual growth and motivational maturation did not directly influence the development of creative thinking.

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In a study of 60 6-year-olds and 60 8-year-olds, Rieben and Mengal (1977) utilized the WISC, Torrance Tests of Creative Thinking and Wallach-Kogan and found that in 6-year-olds, general intelligence and creativity are closely related and cannot be differentiated by factor analysis. However, in 8-year-olds, three factors were identified which suggests that creativity is not a unidimensional construct.

When Torrance indicators of creative thinking were examined in a developmental study of 50 males and 50 females ages 5-6, 8-10 and 11-12, support was given to the relationship between Piaget's theory of cognitive development and Torrance's theory of creative thinking (Alieldin, 1978). It was found that highly creative older children produced more global movements, a significantly greater number of integrated drawings, a significantly greater number of unusual visual perspective responses, and a significantly greater number of perceptual humor than their younger cohort groups.

Silverman (1963) found that regression in the service of the ego occurred during the creative process in a study of children's verbalizations while painting. For subjects, a positive relationship existed between the artistic creativity of painting and manifestations

of controlled primary process thinking in the verbalizations made during the specific painting.

Ideational fluency and originality scores at the verbal production, non-verbal production and non-verbal recognition levels were found to be related and independent of general intelligence when 144 kindergarten, second and fourth grade students were given a verbal production task adapted from Wallach-Kogan, a non-verbal production task adopted from Torrance Tests of Creative Thinking and a devised non-verbal recognition task (Thies & Friedrich, 1977).

Imagery was found to be correlated to creativity in high-IQ children when Shaw and DeMers (1986-87) studied 54 fifth and sixth grade males and females using the Remote Associates Test, Circles Test (Torrance), Vividness of Visual Imagery Questionnaire, and Visual Memory Test. Imagery was also found to significantly account for variance in two of three creativity variables in the study.

When comparing children's creativity at different levels, Dudek (1974) conducted a longitudinal study using 27 children whom she followed from grade 1 through grade 6. The Torrance Tests of Creative Thinking was used to measure creativity and personality was measured using Cattell's Children's Personality Questionnaire and psychiatric examination. It was found that when creativity in young children is defined as openness and spontaneity, it appears to be an attitude or personality trait. Creativity as measured by the Torrance Tests of Creative Thinking appeared to crystalize around age 10 and

remain stable. There was also positive relationships of creativity with mental health and emotional extroversion in early years that no longer appeared to exist by grade 5. ; ²...

Feirstein (1965) utilized the Rorschach, a Word Association Test and an Art Preference Test to study personality correlates for unrealistic experience in a study of 20 graduate students. It was found that tolerance for unrealistic experiences related to the capacity to engage in both integrated unrealistic and integrated drive-related thought which validated Freud's theories.

Individual differences in the effects of perceptual isolation as related to Rorschach manifestations of the primary process were studied in 14 male college students. Data supported the psychoanalytically derived hypothesis that continued contact with reality structure is necessary to maintain primary process thinking (Goldberger, 1959).

Rorschach correlates of creativity in children including repression, regression and ego functions were studied using 7- to 10-year-olds from a creative arts daycamp. Although rigorous screening of the control group was not a criteria, the study demonstrated significant differences for creative children including less repressive style, great flexibility in the use of repression, greater rapidity in fluctuations in reality contact level, and a higher degree of integrative functions (Mandell, 1976.)

Baker (1978) studied the correlation between the subscores and

total scores on the Torrance Tests of Creative Thinking and the Rorschach on a group of 26 third-, fourth- and fifth-grade teachers and 51 fourth-grade students. The results demonstrated no significant correlations between the Rorschach Inkblot Test Human Movement or Total Movement response and the Torrance Tests of Creative Thinking. However, significant relationships were found between Total Rorschach Index of Repressive Style, Inanimate score and overall Torrance score. The children's non-verbal Torrance score related significantly to Total Rorschach Index of Repressive Style. It was concluded that the Rorschach measures creativity while the Torrance and the Rorschach Index of Repressive Style measure divergent thinking.

Results of various studies correlating primary process and creativity in children have differed. Although findings have been weighted towards positive correlation (Silverman, 1964; Russ, 1982; Caprara, 1986), Rogolsky's (1967) findings did not support the hypothesis of primary process as the main source of creativity in children. In all of the studies, the Holt method for scoring of primary process manifestations was used. However, an intervening factor in each of these previous studies has been the contamination of ratings by the scores rated for primary process as opposed to creativity.

To validate the creativity rating obtained using Holt's method (1970), a correlation of .43 ($\underline{p} < .01$) was obtained with clinical ratings of Murray's Needs for Construction (creative) and Understanding.

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It was also significantly correlated to two experimentally independent measures of creativity on the Brick Uses Test: Flexibility, $\underline{r} = .54$, $\underline{p} \lt .01$; Fluency, $\underline{r} = .41$, $\underline{p} \lt .01$.

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Rorschach

Rorschach responses were rated for creativity using the rating system developed by Holt (1970) in which originality rating is based on statistical infrequency of response. Quality and richness of form ⁴ level, sensitive use of determinants, and appropriate elaboration of responses were also considered. A five-point scale which rates popular or unelaborated responses as a 1 ranges up to a score of 5 for responses which are considered to be most original (rich). An average creativity score for each Rorschach was determined and used to obtain a correlation with the criterion measure.

Torrance Tests of Creative Thinking: Verbal Form A

Verbal Form A is a series of seven subtests (activities) which serve as a cognitive measure of creativity, and assesses originality, flexibility and fluency which are related to creativity. Total composite scores of these seven subtests formed the criterion measure for Holt's creativity scale.

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The seven subtests that comprise Verbal Form A are: 1.) Asking, 2.) Guessing Causes, 3.) Guessing Consequences, 4.) Product Improvement, 5.) Unusual Uses of Cardboard Boxes, 6.) Unusual Questions about Cardboard Boxes, and 7.) Just Suppose. For the purposes of all seven

tasks, fluency is defined as the total number of relevant responses.
For the Asking subtest, the fluency score is the number of relevant questions which are asked by the subject. If the question can be answered by looking at the picture, no fluency score is given for that response. The Asking subtest is scored on 17 points for general flexibility. One point is given for each category for a total possible flexibility score of 17. An originality score of 0 is given to responses given by 5 percent or more of former respondents. A score of 1 is given for responses given by 2.0 to 4.99 percent of former respondents. Responses that demonstrate "creative strength" are given a score of 2. These responses are not included in the scoring criteria. This same standard is used throughout the seven subtests for scoring originality.

Relevant causes on the Guessing Causes subtest are counted to determine fluency. Flexibility is determined under 16 general categories with one point being given for each category. Originality is determined in a similar manner to the Asking subtest.

Fluency on the Guessing Consequences subtest is determined by the number of relevant cause-effect responses given. Sixteen general categories are scored for flexibility. Originality is scored according to frequency of responses.

On the Product Improvement subtest, fluency is scored for the number of responses given which improve the pictured elephant as a toy. Flexibility is scored on 23 categories for a possible high

score of 23. Originality is scored by frequency of response.

The fluency score for the Unusual Uses of Cardboard Boxes subtest is the number of different unusual uses produced. A high score of 28 can be received with one point given for responses which fall into each of 28 possible categories. The originality score is determined by the frequency of the responses given in relation to previous responses.

Unusual Questions About Cardboard Boxes is scored for fluency by counting the number of relevant questions asked about cardboard boxes. No score is given for flexibility on this activity. Originality is scored according to Burkhart criteria for divergent power related to personal questions and factual established knowledge.

On the Just Suppose subtest, originality is scored first and is judged by the rarity of response. It is given a score of 0 to 2 depending on frequency of response. Fluency is scored by counting the number of different consequences listed. Flexibility is defined as a change or shift in attitude or focus rather than using static categories as in the other subtests.

In an effort to give support to the hypothesis that creativity can be evaluated using the Rorschach, this study attempts to demonstrate a positive relationship between creativity scores on the Rorschach using Holt's scoring manual and scores obtained for originality, flexibility, and fluency on the Torrance Tests of Creative Thinking: Verbal Form A. It is hoped that this study

contributes substantially to the current research validating the use of the Rorschach as a measure of creativity.

CHAPTER 2

METHOD

Subjects

The sample population of this study consisted of 30 subjects from several small midwestern towns who were tested by an independent researcher with experience in administering projective instruments. Included in the sample were 15 males and 15 females ranging in age from 6 through 12 years of age.

Subjects and their parents were required to sign an informed consent document after being read an informed consent statement which described the intent and purposes of the testing as well as the testing procedures to be followed. This form verified their permission to engage in the study.

Confidentiality was observed by retaining only the sex and age of the subjects on the testing forms. An application for approval to use human subjects was submitted to Emporia State University's Review Board for Treatment of Human Subjects and a copy of that application, the informed consent statement and the informed consent form were submitted with that application per Board requirements.

Variables

Four variables, which produced scorable data, composed this study. The first Variable is the score attained for creativity on the Rorschach. Variable 2 is the score attained by each subject

for fluency on the Torrance. Variable 3 is the score each subject attained for flexibility on the Torrance. Variable 4 is the score attained for originality on the Torrance by each subject. These four scores were used to obtain correlational data.

Materials

The Rorschach Psychodiagnostics, hereinafter to be referred to as the Rorschach, and the Torrance Tests of Creative Thinking: Verbal Form A were the test instruments employed. They were administered to each subject.

The Rorschach, a series of 10 cards with pictures of inkblots on them, was presented to each child and responses were recorded verbatim per Klopfer technique. The Holt manual for scoring primary process manifestations on the Rorschach was used to score the Rorschachs for primary process manifestations from which an average creativity score was obtained.

The Torrance Tests of Creative Thinking: Verbal Form A consists of a series of seven subtests which are timed and, inclusively, require 45 minutes for administration. Separate instructions were read to each child for each of the seven subtests and the child was allowed to work for five minutes on each subtest with the exceptions of the Unusual Uses subtest and the Product Improvement subtest for which ten minutes each was allowed. Specific scoring instructions are given in the Torrance manual and each test was scored according to those directions.

Procedure

The Rorschach was individually administered to each subject with the researcher recording the responses manually. Subjects were instructed to use their imagination in forming their responses.

For administration of the Torrance, each child was given a test booklet. After the subject had written the date and his/her age and sex on the front of the booklet, the following instructions were read:

The activities in this booklet will give you a chance to use your imagination in thinking up ideas and putting them into words. There are no "right" or "wrong" answers like there are in most things that we do. We want you to see how many ideas you can think of and we think you will find this fun. Try to think of interesting, unusual, and clever ideas - something that no one else will think of.

You will have seven different things to do and you will be timed on each one, so make good use of your time. Work as fast as you can without rushing. If you run out of ideas before time is called, wait until instructions are given before going on to the next activity. Sometimes if you will just sit and think more ideas will come to you and you can add those.

If you have any questions after we start, don't speak out loud. Raise your hand and I shall come to your desk

and try to answer your questions (Torrance, 1974).

To prevent experimenter bias, the originator of this study did not administer any of the tests used for purposes of this study. Each Rorschach and Torrance was numbered from 1 to 30 to correspond with its appropriate subject.

The Torrance was scored by two independent raters hired specifically for the purpose of scoring these tests. Raters scored each test for originality, flexibility and fluency. The tests contained no demographic information relevant to the subjects, but were simply numbered from 1 to 30 to correspond to their appropriate Rorschachs.

Each Rorschach was scored for a composite creativity score by an independent clinical psychologist researcher using the Holt method. This scorer did not have access to subject scores achieved on the Torrance. Each Rorschach was numbered from 1 to 30 to correspond with its respective Torrance.

Statistical Design

The above-described procedures produced four scores for each subject: one score was obtained from administration of the Rorschach and three scores were obtained from the administration of the Torrance. Scoring of both instruments resulted in raw scores which were used to produce correlational data. Group means and standard deviations were determined for each variable.

A Pearson Product-moment correlation was employed to test for

strength of relationship among the four variables. A test of significance was also employed to determine significance for each variable from a computational table for \underline{r} .

CHAPTER 3

RESULTS

There were four scores obtained for each subject as a result of the administration of the Rorschach Inkblot Test and the Torrance Tests of Creative Thinking: Verbal Form A. The means, the standard deviations, and the ranges of the obtained scores are presented in Table 1.

Table 1

Means, Standard Deviations and Ranges of Creativity Scores on the Rorschach and Torrance

Test Instrument	M	SD	Range
Rorschach			
Average Creativity	2.48	.87	1.1-3.9
Torrance			
Fluency	89.53	37.32	28-140
Flexibility	76.46	34.67	18-126
Originality	88.73	38.71	28-140

Average creativity scores on the Rorschach ranged from 1.1 to 3.9 with a mean of 2.48 and a standard deviation of .87. Scores for fluency on the Torrance ranged from 28 to 140 with a mean of 89.53 and a standard deviation of 37.32. The range for scores for flexibility on the Torrance was from 18 to 126 with a mean of 76.46 and a standard deviation of 34.67. Torrance scores for originality ranged from 28 to 140 with a mean of 88.74 and a standard deviation of 38.71.

A Pearson Product-moment correlation was computed for inter-rater reliability on the Torrance Tests of Creative Thinking: Verbal Form A. Inter-rater reliability for fluency was .99; for flexibility, .96; and for originality, .92.

A Pearson Product-moment correlation was computed between creativity scores obtained on the Rorschach and each of the three scores of mental ability measured by the Torrance to determine the relationship between these scores. The correlations for the scores obtained are presented in Table 2. Values presented for both instruments are presented as r values.

Table 2

Correlation Between Rorschach and Torrance Scores of Creativity

		Torrance		
	Fluency	Flexibility	Originality	
Rorschach	.925*	•875*	. 920*	

*All values were found to be statistically significant at the p <.01 level.

The Rorschach was found to correlate positively with fluency scores on the Torrance at .925. Torrance scores for flexibility correlated positively with the Rorschach at .875. Correlation between Torrance originality scores and the Rorschach was .920. These correlations were found to be statistically significant with 1 df when p < .01.

A Pearson Product-moment correlation was calculated for females and males to compare the scores that they earned on the Rorschach and the Torrance. Correlations for females were .90 for fluency, .80 for flexibility, and .87 for originality. Correlations for males were .90 for fluency, .90 for flexibility, and .91 for originality. These results were determined to be statistically significant when p < .01.

CHAPTER 4

DISCUSSION

Rieben and Mengal (1977) have suggested that creativity is not a unidimensional concept which is supported by various research which has endeavored to determine the composition of creativity empirically (Alieldin, 1978; Russ, 1980; Thies & Friedrich, 1977). Some research has determined that primary process appears to compose a portion of what we call creativity (Rogolsky, 1967; Russ, 1982; Silverman, 1973), but that other factors such as fluency, flexibility and intelligence are not sole determinants of an individual's ability to utilize creativity (Goodman, 1976; Hocevar, 1979; Kershner & Ledger, 1983; Runco, 1986; Sherwood, 1969). Tolerance for unrealisitic experiences and the use of primary process thinking have been found to decrease with age (Caprara, 1986; Georgopoulo, 1968) and imagery has been found to correlate positively with creativity (Shaw & Demers, 1986-87). Still other researchers have suggested that creativity tends to crystallize and stabilize around age 10 (Dudek, 1974) and appears to relate more to personality functioning and repressive style (Baker, 1978; Mandell, 1976).

Farinelli (1988) previously investigated the relationship between scores earned on the Rorschach for creativity and scores earned on the Torrance: Unusual Uses subtest with adult subjects

and found a positive correlation of .692 for fluency, .738 for flexibility, and .638 for originality. No previous research has focused on the use of the Rorschach as a measure of creativity with children or attempted to validate its use for that purpose. This study employed the entire Verbal Form A from the Torrance Tests of Greative Thinking and used children as the target population. The current study attempted to correlate Rorschach creativity scores with scores obtained on the Torrance Tests of Creative Thinking in an effort to give credence to Holt's theories concerning the ability of the Rorschach to adequately measure creativity with children as well as adults.

Results of this study indicated a significant correlation between a mean creativity score on the Rorschach using Holt's system for scoring and the total creativity scores attained on each of the three mental abilities measured by the Torrance Tests of Creative Thinking. A correlation of $\underline{r} = .92$ was obtained between the Rorschach and fluency on the Torrance. The correlation between flexibility on the Torrance and the creativity score on the Rorschach was .87. Originality as measured by the Torrance and the Rorschach score for creativity correlated at .92. All three of these scores were found to be statistically significant at the $\underline{p} \lt .01$ level.

Ages of the subjects in the study were weighted towards 10-12year olds which could be a positive factor for establishing validity in that Dudek (1974) determined that creativity tended to crystallize

and stabilize around this age. Although there was a slight measured difference between scores of males and females in the current study, there is no evidence to indicate that this difference was a result of difference in the sex of the subjects. The difference between the scores was not large enough to make this inference. If creativity is not a function of intelligence as suggested by Runco (1986), the results of this study could be construed to indicate that creativity may relate more to other types of cognitive processes such as the ability to use imagery, style of cognition, and hemispheric dominance rather than to variables such as age or sex.

Statistical evidence supports the theory that when using Holt's scoring method for creativity in conjunction with the Rorschach, the Rorschach measures the same property that is measured by the Torrance. Results of this study demonstrate that the Rorschach can be employed as a valid measure of creativity with children when using Holt's scoring system.

Thus the Rorschach presents itself as an excellent and valuable tool for determining creativity in children in clinical research and clinical therapy. It could also be employed as an effective tool in educational research with the constraint of adequate clinical training of researchers. Use of the Rorschach to measure creativity can lead to a more thorough knowledge and understanding of the property we call creativity.

REFERENCES

- Alieldin, M.T. (1979). Torrance indicators of creative thinking: A developmental study (Doctoral dissertation, University of Georgia, 1978). Dissertation Abstracts International, 39, 4129.
- Baker, M. (1978). The Torrance tests of creative thinking and the Rorschach Inkblot Test: Relationships between two measures of creativity. <u>Perceptual and Motor Skills</u>, <u>46</u>, 539-547.
- Caprara, G.V., Holt, R., Pazielli, M.F. & Giannotti, A. (1986). The development of primary process in children's Rorschachs. Journal of Personality Assessment, 50, 149-170.
- Cohen, I.H. (1960). Adaptive regression, dogmatism and creativity (Doctoral dissertation, University of Michigan, 1960).

Dissertation Abstracts international, 21, 3522.

- DeMartino, A.J. (1971). The relations among adaptive regression, independence and creativity in adolescents (Doctoral dissertation, New York University, 1970). <u>Dissertation Abstracts International</u>, 32, 539.
- Dudek, S.Z. (1967). Creativity and the Rorschach human movement response: An analysis of the relationship between quantity and quality of M and creative expression in artist and non-artist groups. (Doctoral dissertation, New York University, 1960). Dissertation Abstracts International, 27/11-B, 4120.

- Farinelli, F.J. (1988). The relationship of scores on the Rorschach Inkblot Test and the Torrance Tests of Creative Thinking: Unusual Uses. A preliminary study. Unpublished master's thesis, Emporia State University, Emporia, KS.
- Feirstein, A. (1965). Personality correlates of tolerance for unrealistic experiences. (Doctoral dissertation, Yale University, 1965). Dissertation Abstracts International, 26/08, 4804.
- Freud, S. (1933). <u>The interpretation of dreams</u> (J. Strachey, Trans.). New York, Macmillan. (Original work published 1900).
- Freud, S. (1958). Project for a scientific psychology In J. Strachey (Ed. and Trans.). <u>The standard edition of the complete psychological</u> <u>works of Sigmund Freud</u>, Vol. 1. London: Hogarth. (Original work published 1895).
- Freud, S. (1958). Formulations on the two principles of mental functioning. In J. Strachey (Ed. and Trans.). <u>The standard</u> <u>edition of the complete psychological works of Sigmund Freud</u>, <u>Vol. 12</u>. London: Hogarth. (Original work published 1911). Georgopoulo, E.M. (1969). Tolerance for unrealistic experiences:
- A study with selected age groups (Doctoral dissertation, Yeshiva University, 1968). <u>Dissertation Abstracts International</u>,
 - <u>30/01-B</u>, 368.
- Goldberger, L. (1959). Individual differences in the effects of perceptual isolation as related to Rorschach manifestation of the primary process (Doctoral dissertation, New York University,

1958). Dissertation Abstracts International, 19/07, 1816.

- Gray, J.J. (1968). An investigation of the relationship between primary process thinking and creativity (Doctoral dissertation, Fordham University, 1967). <u>Dissertation Abstracts International</u>, 28/12-B, 5206.
- Hocevar, D. (1979). The unidimensional nature of creative thinking in fifth grade children. <u>Child Study Journal</u>, <u>9</u>, 273-278.
- Holt, R.R. (1956). Gauging primary and secondary processes in Rorschach responses. <u>Journal of Projective Techniques</u>, <u>20</u>, 14-25.
- Holt, R.R. (1960). <u>Manual for the scoring of primary process</u> <u>manifestations in Rorschach responses</u>. New York: Research Center for Mental Health. (Dittoed, Draft 8).
- Holt, R.R. (1970). <u>Manual for the scoring of primary process</u> <u>manifestations in Rorschach responses</u>. Hew York: Research Center for Mental Health. (Dittoed, Draft 10)
- Holt, R.R. & Havel, J. (1960). A method for assessing primary and secondary process in the Rorschach, In Ricken-Ovsiankina, M.A.

(Ed), Rorschach Psychology, New York: Wiley.

- Holt, R.R. (1960). Cognitive controls and primary processes. Journal of Psychological Researches, 4, 105-112.
- Holt, R.R. (1970). Artistic creativity and Rorschach measures of adaptive regression. In M. Meyer and B. Klopfer (Ed), <u>Development</u> <u>in the Rorschach Technique</u>, <u>Vol. III</u>. New York: Harcourt, Brace & World.

- Kershner, J.R. & Ledger, G. (1985). Effect of sex, intelligence, and style of thinking on creativity: A comparison of gifted and average IQ children. <u>Journal of Personality and Social Psychology</u>, 48, 1033-1040.
- Khatena, J. (1973). Imagination and production of original verbal images. Art Psychotherapy, 1, 193-200.
- Klopfer, B., Ainsworth, M.D., Klopfer, W.G. & Holt, R.R. (1954). Developments in the Rorschach Technique. New York: World Book Company.
- Kris, E. (1952). <u>Psychoanalytic explorations in art</u>. New York: International Universities Press.
- Mandell, S.S. (1976). Rorschach correlates of creativity in children: Repression, regression, and ego functions in creative seven- to ten-year-olds (Doctoral dissertation, Adelphi University, 1976). Dissertation Abstracts International, 36, 6390.
- Mitchell, R.R. (1974). Physiognomic responsiveness, primary process thinking and Rorschach measures of creativity (Doctoral dissertation, New York University, 1974). <u>Dissertation Abstracts International</u>, <u>35/08B</u>, 4188.
- Payne, M.L. (1979). The relationship between adaptive ego functioning and creativity (Doctoral dissertation, University of Houston, 1978). <u>Dissertation Abstracts International</u>, <u>39</u>, 4063-4064.
- Rapaport, D. (1950). On the psychoanalytic theory of thinking.

International Journal of Psychoanalysis, 31, 161-170.

- Rieben, L. & Mengal, P. (1977). Global intelligence, creativity and cognitive operations in children: Factorial and discriminant analyses. <u>Psychologie-Schweiseriche Zeitschrift fur Psychologie</u> und ihre Anwundungen, 36, 100-108.
- Rogolsky, M.M. (1967). Artistic creativity, adaptive regression and independence of judgment in third-grade children (Doctoral dissertation, Harvard University, 1966). <u>Dissertation Abstracts</u> International, 27/12-B, 4556.
- Rosenthal, A., et al. (1983). Comparison of inter-rater reliability on the Torrance tests of creative thinking for gifted and nongifted children. <u>Psychology in the Schools</u>, <u>20</u>, 35-40.
- Runco, M.A. (1986). Predicting children's creative performance. <u>Psychological Reports</u>, <u>59</u>, 1247-1254.
- Russ, S.W. (1980). Primary process integration on the Rorschach and achievement in children. <u>Journal of Personality Assessment</u>, <u>46</u>, 569-577.
- Shapiro, E. (1975). Toward a developmental perspective on the creative process. Journal of Aesthetic Education, 9, 69-80.
- Shaw, G.A. & DeMers, S.T. (1986). The relationship of imagery to originality, flexibility and fluency in creative thinking. Journal of Mental Imagery, 10, 65-74.
- Shaw, G.A. & DeMers, S.T. (1986-87). Relationships between imagery and creativity in high-IQ children. <u>Imagination, Cognition and</u> Personality, 6, 247-262.

- Sherwood, D. (1969). The differential effects of assessment context and scoring method on creativity performance in children (Doctoral dissertation, Duke University, 1969). <u>Dissertation Abstracts</u> <u>International</u>, 30, 1888.
- Silverman, D.K. (1964). Adaptive regression and creativity: A study of children's verbalizations while painting (Doctoral dissertation, New York University, 1963). <u>Dissertation Abstracts</u> International, 26, 1812.
- Suler, J.R. (1980). Primary process thinking and creativity. Psychological Bulletin, 88, 144-165.
- Thies, C.A. & Friedrich, D.A. (1977). Creativity: Ideational fluency and originality at the verbal and nonverbal production and recognition levels. <u>Creative Child and Adult Quarterly</u>, <u>2</u>, 213-226.
- Thomas, C.B., Ross, D.C. & Freed, E.S. (1964). <u>An index of Rorschach</u> <u>responses</u>. Baltimore, MD: The John Hopkins Press.
- Torrance, E.P. (1962). <u>Guiding creative talent</u>. New Jersey: Prentice-Hall.
- Torrance, E.P. (1965). <u>Rewarding creative behavior</u>: <u>Experiments</u> in classroom creativity. New Jersey: Prentice-Hall.

Torrance, E.P. (1965). Scientific views of creativity and factors affecting its growth. Daedalus, 94, 663-681.

Torrance, E.P. (1967). The Minnesota studies of creative behavior: National and international extensions. Journal of Creative

behavior, 1, 137-154.

- Torrance, E.P. (1968). Examples and rationales of test tasks for assessing creative abilities. <u>Journal of Creative Behavior</u>, 2, 165-178.
- Torrance, E.P. (1972). Predictive validity of the Torrance tests of creative thinking. <u>Journal of Creative Behavior</u>, <u>6</u>, 236-252. Ungersma, A.J. (1976). Fantasy, creativity, conformity. <u>Humanitas</u>, 12, 73-88.
- Wulach, J. (1977). Piagetian cognitive development and primary process thinking in children. <u>Journal of Personality Assessment</u>, <u>41</u>, 230-237.
- Zins, J. (1983). Comparison of inter-rater reliability on the Torrance tests of creative thinking for gifted and nongifted students. Psychology in the Schools, 20, 35-40.